

REMARKS/ARGUMENTS

Claims 1-26 are canceled without prejudice. New claims 27-34 are added. Claims 27-34 are pending in the application. Reexamination and reconsideration of the application, as amended, are respectfully requested.

Claim Rejections—35 U.S.C. § 112, second paragraph

Claims 1-9 stand rejected under 35 U.S.C. § 112, second paragraph for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-9 have been canceled without prejudice. New claims 27-35 are added. Applicant respectfully submits that new claims 27-35 patentably distinguish over the cited art.

Regarding the prior claims, the Office contends that prior claims 1-9 recite “a bus bar” in reference to two different objects and then further refer back to “the bus bar” without clarifying which bus bar. In new claims 27-35, the claims specifically refer to “a first bus bar” and a “second bus bar.”

The office contends that claim 3 recites the limitation “the width” in line 2 because “the width” lacks antecedent basis and is not described or defined (paraphrasing) as a particular dimension of the objection. In new claims 27-35, for example new claim 27, the claims define a longitudinal direction and a width direction.

Claim Rejections-35 U.S.C. § 103(a)

In the outstanding Office Action, Claims 1-5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Komori (US 6,265,242) and Lindmayer (US 4,057,439). Claims 6 and 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Komori and Lindmayer as applied to claim 4 and further in view of Okada (JP 2003-332272) . Claims 8 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Komori and Lindmayer as applied to claim 1 and further in

view of Tanaka (US 20020148499). Claims 9 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Komori and Lindmayer as applied to claim 4 and further in view of Lally (US 6198207) and Kujas(4685604).

In response, claims 1-9 were canceled without prejudice. New claims 27-35 are added. Applicant respectfully submits that new claims 27-35 patentably distinguish over the cited art.

New claim 27 is as follows:

A solar cell module comprising:
a plurality of solar cell elements each having a front surface and a rear surface;
a first bus bar electrode provided on the front surface;
a second bus bar electrode provided on the rear surface;
each bus bar electrode having a longitudinal direction;
an inner lead for electrically connecting the first bus bar electrode of a one of the solar cell elements and the second bus bar electrode of an other of the solar cell elements;
and a filler for sealing the first and the second bus bar electrodes and the inner lead,
wherein in a plan view of the front surface of the solar cell element, a width of the inner lead along a width direction perpendicular to the longitudinal direction is smaller than one of a width of the first bus bar electrode and a width of the second bus bar electrode along the width direction,
wherein each of the first and the second bus bar electrodes comprises a first region being connected with the inner lead and a second region including an edge portion along an edge parallel to the longitudinal direction that is nearer to the edge than the first region, and
wherein the second region is in direct contact with the filler.

In detail, claim 10 defines a width direction to be perpendicular to the longitudinal direction of the bus bar electrode. The longitudinal direction is shown for, instance , in Applicant's specification at Figs. 3(a) and 3(b). New claim 27

requires that, in a plan view of the front surface of the solar cell element, a width of the inner lead along the width direction is smaller than one of a width of the first bus bar electrode and a width of the second bus bar electrode along the width direction. Further, in the present invention, the second region, which is closer to the edge of the bus bar electrode, is in direct contact with the filler.

As explained in applicant's specification with respect to Fig. 5, although the whole surfaces of the bus bar electrodes 4a and 5a have been conventionally coated with a solder 6 having high rigidity, the portions F are coated with the filler 10 in the present invention. Therefore, stresses applied to the bus bar electrodes 4a and 5a are reduced. It is possible to reduce tensile stresses applied to the vicinities of the boundaries between the edges along the longitudinal direction of the bus bar electrodes 4a and 5a and the surface of the silicon substrate 1, and to restrain stress concentrations on the silicon substrate 1. This allows defects such as micro cracks to be prevented from occurring in the silicon substrate 1 near the bus bar electrodes 4a and 5a, thereby making it possible to prevent a craze in the subsequent manufacturing process. Applicant's Specification, Para. [0084], Patent Publ. No. 2007/0095387.

In contrast, In Fig. 7A of Komori, a plan view of the front surface of the solar cell, widths of the inner lead and the bus bar electrodes are substantially same. Moreover, as shown in Fig. 7B, the resist 14 will interrupt direct contact with filler. Thus, the present invention distinguishes over Komori. Further, Lindmayer and the other cited references do not cure the defects noted with respect to Komori.. New claim 27 thus distinguishes over the cited art for at least these reasons. Allowance of new claim 27 is respectfully requested

Attorney Docket No. 374611-000053
Customer No.: 73230